A NEW PHILIPPINE LEPTOPODID WITH REMARKS ON THE CLASSIFICATION OF THE FAMILY (HEMIPTERA).

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Since 1911, the classification of the Leptopodidae has remained essentially as Horváth left it.[1] Very few new species have come to light and these have not disturbed the picture. Unfortunately it now becomes necessary to revise our ideas regarding the *Erianotus-Valleriola-Martiniola* complex. While collecting on the island of Luzon in 1936 I took the first Leptopodids ever to be recorded from the Philippine archipelago. The species is remarkable in possessing an elongate subparallel body form, long third antennal segment, and a single series of short spines on the front tibiae as in the large oriental genus *Valleriola* Distant. However, the legs are glabrous and the front femora are armed with two rows of spines as in *Martiniola* Horváth and *Erianotus* Fieber. Of these it resembles *Erianotus* because the anterior tibiae have only a single series of spines, whereas the hemelytral venation is precisely as figured for the African *Martiniola*. Thus the Philippine species exhibits a reshuffling of generic characters and suggests that this complex may be a single monophyletic group of wide distribution in the old world. The new species has been assigned to *Erianotus* because this is the oldest name by 40 years. Mr. J. R. de la Torre-Bueno has very kindly read the manuscript and offered several suggestions.

Erianotus buenoi Usinger, new species.

Form elongate-oval with sides subparallel, slightly over three times as long as broad. Body sparsely clothed with long, erect, slightly curved hairs and a more or less distinct silvery "bloom." *Head* twice as broad across across eyes as long on median line, wider than pronotum and about as wide as body across hemelytra. *Eyes* exceedingly large, pedunculate, twice as wide as interocular space in front, three-fourths as wide as interocular space at middle, produced well in front of anterior margin of head, their inner margins broadly concave on anterior half and narrowly, deeply notched at posterior fourth. *Interocular space* deeply concave above and clothed with a fine, appressed pubescence with two glabrous areas just before level of

[1] Horváth, G. 1911. Révision des Leptopodides. Ann. Mus. Nat. Hungarici, 9: 358–370. 5 figs.

anterior margins of eyes, a postmedian elevation bearing the closely approximate ocelli and a posteriorly divergent velvety area behind ocelli which joins the abruptly constricted and thence feebly convex velvety neck region; three erect curved bristles behind ocelli, one on either side of head near posterior constriction, another pair just beyond middle and a third pair in front of anterior glabrous areas. *Front* short, strongly declivous, longitudinally sulcate at middle, transversely carinate just before insertion of antennae; *clypeus* strongly bulbously elevated between antennal bases. *Bucculae* very large, scarcely longer than deep, open in front and closed behind. Under surface of head with three long, stout, curved spines on either side, labrum reaching only to tip of bucculae. *Rostrum* long and slender, the first segment longest, with two long curved spines on either side; second segment half as long as first, without stout spines; third segment one-third as long as first, slender, acuminate at tip. *Antennae* longer than body, 192:: 185; proportion of segments one to four as 14: 34: 68: 76; first segment thick at middle, attenuate at either end, second slender, cylindrical except for slight enlargement at apex, third and fourth long, filiform. *Pronotum* unarmed, one-fourth broader across humeri than long, about one-third longer than head on median line; convex above, transversely impressed subapically and about at middle, the front lobe thus formed being longitudinally impressed at middle, posterior lobe depressed at humeri; lateral margins sinuately carinate, curved and laterally flattened at humeri; disk sparsely, regularly covered with large, shallow punctures except on elevated portions of anterior lobe, sparsely beset with long, curved bristles, posterior margin scarcely arcuate and feebly sinuate at basal angles of scutellum. *Scutellum* about as long as broad, roundly elevated laterally with a large cordate depression at middle; acute at depressed apex and provided with erect bristles. *Hemelytra* exceeding tip of abdomen by about one-third their length; costal margins subparallel at basal fourth, slightly widened before middle and then arcuately converging towards apex; inner margins of clavi strongly sinuate around scutellum; main corial vein branching to form two apical cells in the corium but without a cross-connection to costal margin; clavus and corium with scattered bristles mostly along veins, the costal margin smooth, with a few short erect hairs just within the edge; corium impunctate except unevenly laterad of main vein at base; clavus with a row of punctures

along claval vein and ill-defined punctures marginally at base. *Under surface* mostly shining and clothed with a short, erect pubescence and propleura and front of prosternum duller and coarsely punctate; intercoxal portion of prosternum finely granular; front acetabula large, indistinctly punctate, with a single, anteriorly directed spine on each; mesosternum longitudinally impressed on posterior half; metasternum narrow, depressed basally and roundly elevated posteriorly, ostiolar openings velvety on either side behind intermediate acetabula and below bases of hemelytra; abdomen subflattened beneath, much narrower than hemelytra. *Coxae* elongate, rotatory, the front pair longest, beset with several long, slender spines at base and apex, the trochanters likewise spiny. Front femora about as long as third antennal segment, thick at base, attenuated apically, bearing two rows of short, peg-like spines on inner face with three long, stout spines along basal half of outer row and two along inner row apically, the one near middle set somewhat off the main row. Front tibiae less than one-fourth shorter than femora, slender and nearly cylindrical with a single row of short, apically directed spines along inner face. Front legs clothed with irregular fine erect hairs. Middle and hind legs without spines or bristles and only very sparsely clothed with short erect hairs. Middle femora slightly longer and hind femora much longer than front femora, less thickened basally and very slender apically. Middle tibiae about as long as femora, hind tibiae much longer than femora. All tarsi slender, three-segmented, clothed with a short pubescence.

Color black, with ochraceous deflected apex of head, dull post-ocellar region before neck, posterior margin of pronotum, apex of scutellum, a stripe along middle of corium and along main vein. Costal margins white. Under surface with white bucculae, rostral spines and legs, except for occasional fuscous marks on anterior femora; middle and hind tibial spines brown or black. Posterior margins of abdominal segments three to five white. Eyes silvery. Antennae and rostrum brownish ferrugineous, the basal antennal segments pale below. Upper surface of pronotum, clavus and corium more or less silvery pubescent or plumbeous velvety with a particularly conspicuous spot on each corium at middle of outer discal, and at base of outer apical, closed cell.

Size: length 4.8 mm., width (hemelytra) 1.2 mm.

Holotype, No. 5220, Calif. Acad. Sci., Ent., Montalban, Laguna

Prov., Luzon, P. I., July 24, 1936, R. L. Usinger collector. Two paratypes, same data as the type, one in my collection and one in the collection of Mr. J. R. de la Torre-Bueno, for whom the species is named in appreciation of his assistance in loaning valuable Leptopodid material from other parts of the world.

MATING OF THE HORSEFLY, TABANUS METABOLUS.

By Cornelius B. Philip, Hamilton, Mont.

Although the activities of non-biting males of various species of horseflies (family Tabanidae) have often been recorded, actual copulation has been seen so rarely it appears worth-while to record an experience of the writer with *Tabanus metabolus* McD. While kneeling in the yard of my home in Hamilton, Mont., about 10: 15 A.M., May 1, 1940, my attention was attracted by the familiar buzz of a horsefly and I looked up just in time to see 2 flies meet in mid-air about 3 feet off the ground and about the same distance in front of my eyes thus providing a good "ringside seat" for a performance few tabanid students ever get to see. After a moment's hovering during which coupling was effected, the female flew awkwardly to alight on a nearby bush with the male hanging inertly beneath, in which position they remained until their capture was effected.

During this and the succeeding 2 days, other males were seen to be hovering in various places on the East and South sides of my own and a neighbor's houses, usually over the lawn near some projecting branches of foundation bushes; 14 of these were netted. Three other pairs were also taken resting in the bushes, the males always suspended inertly beneath without grasping the perch on which the female was resting, but none were again seen to unite in the air. Hovering was discontinued each day just before noon, and was not resumed on the fourth or following mornings although there was no change in the bright warm weather. The species is one of the earliest on the wing in the Bitterroot Valley, but is seldom seen even about stock on the Valley floor, which together with the fact there are no obvious open-water breeding places within a half a mile of this location, leads to some wonder with regard to breeding places of this species. There are some points in common with the records of mating of *T. phaenops* observed by Webb and Wells in 1924 near Topaz, Calif.